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SURFACE DEFECT DETECTOR

Patent Number: JP62200251
Publication date: 1987-09-03
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Requested Patent: ☐ JP62200251
Application Number: JP19860043368 19860227
Priority Number(s):
IPC Classification: G01N21/88; H01L21/66
EC Classification:
Equivalents: JP1886124C, JP6010656B

Abstract

PURPOSE: To enable the detection of both deflecting and scattering defects with a compact construction, by providing a light separation means which separates a reflected light from the surface of a body to be inspected into a first reflected light containing a deflecting reflected light and a second reflected light containing a scattering reflected light.

CONSTITUTION: Most of a laser beam (L) is reflected at the central part (A) with a limited transmission factor of a light transmittance distribution filter 4 and after passing through a 1/4 wavelength plate 5, it is directed to the surface 7 of a body to be inspected located at a focal distance (f) of a lens 6 through the lens 6. The laser beam (L) is reflected on the surface 7 of the body being inspected to be a reflected light (R), which is made up of a deflecting reflected light R1 and a scattering reflected light R4. The reflected light (R) is made incident into a light transmittance distribution filter 4 again through the lens 6 and the 1/4 wavelength plate 5, where the deflecting reflected light R1 is incident into lower light transmittance part (A) thereof and hence least passes therethrough to reach a light receiving surface of a photoelectric conversion means 8. On the other hand, the scattering reflected light R4 is incident into a part B with a larger light transmittance part (B) and so passes through to enter the light receiving surface of the photoelectric conversion means 8.

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